Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-04-03-10** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03
Customer's Reference	:	BBMP/EE/BTP/WO/150/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-04-17
Sample ID No	:	2017-04-03-10 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	04-04-17
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.24	_
2	Finess by Air permeablity method (m^2/kg,Min)	273.6	225m^2/kg, Min
3	Density (gm/cc)	3.13	_
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Quality Manager

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-04-03-10** **Date: 02-05-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03
Customer's Reference	:	BBMP/EE/BTP/WO/150/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-04-17
Sample ID No	:	2017-04-03-10 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	04-04-17
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-04-03-10** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03
Customer's Reference	:	BBMP/EE/BTP/WO/150/2016-17
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	03-04-17
Sample ID No	:	2017-04-03-10 /02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-04-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	374	374	2.5	97.5	90-100
3	20 mm	5728	6102	40.7	59.3	30-70
4	10 mm	4773	10875	72.5	27.5	10-35
5	4.75 mm	3464	14339	95.6	4.4	0-5
6	Pan	661	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-04-03-10** **Date: 06-04-17**

Sample ID No : 2017-04-03-10 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.9	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.6	
3	Specific Gravity	2.68	–
4	Bulk Density(Loose) (Kg/l)	1.53	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.2	–

Note:
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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-04-03-10** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03
Customer Reference	:	BBMP/EE/BTP/WO/150/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-04-17
Sample ID No	:	2017-04-03-10 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-04-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	386	386	7.7	92.3	90-100
3	10 mm	2739	3125	62.5	37.5	25-55
4	4.75 mm	1678	4803	96.1	3.9	0-10
5	Pan	197	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-04-03-10** **Date: 06-04-17**

Sample ID No : 2017-04-03-10 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.6	
3	Specific Gravity	2.56	–
4	Bulk Density(Loose) (Kg/l)	1.52	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.25	–
7	Aggregate crushing Value(%)	23.9	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.2	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

Note:

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Authorized Signature
Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-04-03-10** **Date: 06-04-17**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.

Agency : Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03

Customer's Reference : BBMP/EE/BTP/WO/150/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 03-04-17

Sample ID No : 2017-04-03-10 /03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 03-04-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	48	48	4.8	95.2	90-100	90-100	90-100	95-100
3	2.36 mm	184	232	23.2	76.8	60-95	75-100	85-100	95-100
4	1.18 mm	208	440	44.0	56.0	30-70	55-90	75-100	90-100
5	600 micron	168	608	60.8	39.2	15-34	35-59	60-79	80-100
6	300 micron	197	805	80.5	19.5	5-20	8-30	12-40	15-50
7	150 micron	109	914	91.4	8.6	0-10	0-10	0-10	0-15
8	Pan	86	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-04-03-10** **Date: 06-04-17**

Sample ID No : 2017-04-03-10 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.68	–
2	Specific Gravity	2.58	–
3	Material finer than 75 micron(%)	5.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2017-04-03-10** **Date: 08-04-17**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.

Agency : Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03

Customer's Reference : BBMP/EE/BTP/WO/150/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 03-04-17

Sample ID No : 2017-04-03-10 /06

Sample Type /Size : Precast Cover Slab

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 04/04/2017

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	150.36	250.37	2.906	17753	329.5	18.6	17.3	21.6
2	Cover Slab-2	150.72	250.41	2.915	17838	341.9	19.2	17.8	22.3
3	Cover Slab-3	150.37	250.54	2.922	17755	342.4	19.3	17.9	22.4

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-04-11-06** **Date: 15/04/2017**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.

Agency : Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03

Customer's Reference : BBMP/EE/BTP/WO/150/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 11-04-17

Sample ID No : 2017-04-11-06 /01

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 15/04/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	08/04/2017	15/04/2017	150.22 X 150.21 X 150.20	22565	8.324	279.8	12.4	12.5
2	PCC	M15	08/04/2017	15/04/2017	150.24 X 150.21 X 150.18	22568	8.315	291.1	12.9	
3	PCC	M15	08/04/2017	15/04/2017	150.18 X 150.10 X 150.21	22542	8.268	272.8	12.1	

Note:

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 06/05/2017

Lab ID	:	**CP-2017-04-11-06**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Emergency works maintenance of road and drain near Singapura Govt School in ward no.11 Vidyaranyapura Sub Division.
Agency	:	Executive Engineer, KRIDL, #119, 11th Cross Road, Silvestra Arched, 3rd Floor, East Park Road, Malleswaram, Bangalore-03
Customer's Reference	:	BBMP/EE/BTP/WO/150/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-04-17
Sample ID No	:	2017-04-11-06 /02
Customer ID	:	PCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	06/05/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	08/04/2017	06/05/2017	150.22 X 150.21 X 150.20	22565	8.324	403.9	17.9	17.9
2	PCC	M20	08/04/2017	06/05/2017	150.24 X 150.21 X 150.18	22568	8.315	401.7	17.8	
3	PCC	M20	08/04/2017	06/05/2017	150.18 X 150.10 X 150.21	22542	8.268	408.0	18.1	

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